THE JOURNAL OF PARASITOLOGY

Founded by Henry Baldwin Ward

THE JOURNAL OF THE
AMERICAN SOCIETY OF PARASITOLOGISTS

EDITOR
BRENT B. NICKOL

CONSULTANTS
Gilbert A. Castro
Raymond T. Damian
Sherwin S. Desser
John Janovy, Jr.
Mary Hanson Pritchard

EDITORIAL BOARD
Edward Addison
Daniel R. Brooks
William C. Campbell
Bruce M. Christensen
Daniel G. Colley
D. W. T. Crompton
William L. Current
Terry A. Dick
Frank J. Etges
Jacob K. Frenkel
John C. Holmes
Raymond E. Kuhn
J. Ralph Lichtenfels
Philip T. LoVerde
Austin J. MacInnis
John S. Mackiewicz
Leo Margolis
Janice Moore
Miklos Müller
K. Darwin Murrell
Robin M. Overstreet
L. William Scheibel
Clarence A. Speer
Jane A. Starling

VOLUME 76
1990

CONTENTS OF VOLUME 76

FEBRUARY 1990, NUMBER 1

INVITED REVIEW

New Approaches to the Systematics of the Ancyrocephalid Monogenea from Nearctic Freshwater Fishes. MARY BEVERLEY-BURTON and GREGORY J. KLASSEN 1

BIOSYSTEMATICS

A New Genus of Dilepididae (Cestoda) of the Yellowbill *Ceuthmochares aereus* (Cuculidae) from the Ivory Coast. JEAN MARIAUX and CLAUDE VAUCHER 22

Description of the Oocysts of *Eimeria paludosa* (Apicomplexa: Eimeriidae) from *Fulica americana* (Aves: Gruiformes), with Comments on Synonyms of Eimerian Species from Related Birds. CHRIS T. McALLISTER and STEVE J. UPTON 27

Isospora daphnensis N. Sp. (Apicomplexa: Eimeriidae) from the Medium Ground Finch (*Geospiza fortis*) from the Galapagos Islands. THOMAS E. McQUISTION 30

ECOLOGY

The Survivability of the Ectoparasitic Flagellate *Ichthyobodo necator* on Chum Salmon Fry (*Oncorhynchus keta*) in Seawater and Comparison to *Ichthyobodo* Sp. on Japanese Flounder (*Paralichthys olivaceus*). SHIGEHIKO URAWA and MUNEHARU KUSAKARI 33

GENETICS

Identification of Two Isolates of *Trichinella* Recovered from Humans in France. TERRY A. DICK and JEAN DUPOUY-CAMET 41

HOST RESPONSE AND PATHOGENESIS

Schistosoma mansoni Modulation of Phagocytosis in *Biomphalaria glabrata*. SARAH E. FRYER and CHRISTOPHER J. BAYNE 45

Effect of Egg Dosage and Host Genotype on Liver Trapping in Murine Larval Toxocariasis. J. C. PARSONS and R. B. GRIEVE 53

Pathology of Experimental *Sarcocystis falcatula* Infections of Canaries (*Serinus canarius*) and Pigeons (*Columba livia*). J. H. SMITH, P. J. G. NEILL, E. A. DILLARD III, and E. D. BOX 59

IMMUNOLOGY

Detection of Antigens of Larval *Taenia solium* in the Cerebrospinal Fluid of Patients with the Use of HPLC and ELISA. LESZEK CHOROMANSKI, JOHN J. ESTRADA, and RAYMOND E. KUHN 69

Prevalence of *Toxoplasma gondii* Antibodies in Nine Populations of Dairy Goats: Compared Titers Using Modified Direct Agglutination and Indirect Hemagglutination. SHARON PATTON, SANDRA STRAWBRIDGE JOHNSON, and KAREN PUCKETT 74

Circulating Parasite Anitgen in *Brugia pahangi*-infected Jirds. GARY J. WEIL, RAMASWAMY CHANDRASHEKAR, FANYA LIFTIS, CATHERINE S. McVAY, STEPHEN C. BOSSHARDT, and THOMAS R. KLEI 78

Antigen-specific Lymphocyte Proliferative Responses in Inbred Mice after *Trichinella spiralis* Infection. DUZHANG ZHU, XIU-FENG LU, and ROBIN G. BELL 85

LIFE CYCLE AND DEVELOPMENT

Dracunculus insignis in Ferrets: Comparison of Inoculation Routes. FLOY H. BRANDT and MARK L. EBERHARD 93

Ultrastructural Observations on the Developmental Stages of *Lankesterella minima* (Apicomplexa) in Experimentally Infected *Rana catesbeiana* Tadpoles. SHERWIN S. DESSER, MARK E. SIDDALL, and JOHN R. BARTA 97

The Role of Tubificid Oligochaetes in the Transmission of *Goussia carpelli*. DIETER STEINHAGEN and WOLFGANG KÖRTING 104

PHYSIOLOGY

Respiratory Changes Associated with the In Vitro Evagination of *Taenia solium* Cysticerci. MARIO CERVANTES-VAZQUEZ, DOLORES CORREA, MARIE MERCHANT, JUAN JOSE HICKS, and JUAN PEDRO LACLETTE 108

RESEARCH NOTES

Use of Parasite Antigen Detection to Monitor Marcofilaricidal Therapy in *Brugia malayi*-infected Jirds. RAMASWAMY CHANDRASHEKAR, JON A. YATES, and GARY J. WEIL 122

Sex Ratio, Emergence and Infection Rates of *Heterotylenchus*-exposed *Musca autumnalis* (Diptera: Muscidae). JAN CHIRICO 124

Fatal Congenital *Neospora caninum* Infection in a Lamb. J. P. DUBEY, W. J. HARTLEY, D. S. LINDSAY, and M. J. TOPPER 127

Kinetoplastid Flagellates: Surface-reactive Carbohydrates Detected by Fluorescein-conjugated Lectins. DILIP K. GHOSH, ANIL K. GHOSH, KASHI N. GHOSH, ALOK DE, and AMAL BHATTACHARYA 130

Helminth Parasites from North Pacific Anadromous Chinook Salmon, *Oncorhynchus tshawytscha*, Established in New Zealand. L. MARGOLIS and N. P. BOYCE 133

Prevalence of Antibody to *Toxoplasma gondii* in the Moose (*Alces alces americana* Clinton) of Nova Scotia, Canada. S. J. SIEPIERSKI, C. E. TANNER, and J. A. EMBIL 136

THE JOURNAL OF PARASITOLOGY POLICY AND GUIDELINES FOR AUTHORS 113
BOOKS RECEIVED, 1989 145

BOOK REVIEWS

Diagnostic Procedures for Mycotic and Parasitic Infections, 7th ed., edited by Berttina B. Wentworth. MARY N. CLANCY and LYNNE S. GARCIA 96

Grundriss der Parasitenkunde. Parasiten des Menschen und der Nutztiere, 3., überarbeitete und erweiterte Auflage, by H. Mehlhorn and G. Piekarski. GÜNTHER O. W. KRUSE 139

Investigation of Monogeneans in the USSR, edited by O. A. Skarlato. D. C. KRITSKY 140

Parasitic Fauna of Reservoir Fishes of the USSR and Its Evolution, by N. A. Izyumova. CLIVE KENNEDY 141

Trematodes, Their Life Cycles, Biology and Evolution, by T. A. Ginetsinskaya. RAYMOND M. CABLE 142

CRITICAL COMMENT

Cellular Multifunctionality: A Capacity Facilitating Evolutionary Change in the Paucicellular Nematodes. K. A. WRIGHT 143

ANNOUNCEMENTS

American Microscopical Society: Special Offer 40

Diagnostic Parasitology Course 84

APRIL 1990, NUMBER 2

BEHAVIOR

Transverse Phototaxis by Infective Juveniles of *Agamermis* sp. and *Hexamermis* sp. ARIN F. ROBINSON, GRAEME L. BAKER, and CHARLES M. HEALD 147

BIOCHEMISTRY

Calcium-dependent Protein Phosphorylation in *Babesia bovis* and Its Role in Growth Regulation. ALPANA RAY, JANET QUADE, C. ANDREW CARSON, and BIMAL K. RAY 153

DIAGNOSTICS

Immunohistochemical Demonstration of *Trypanosoma evansi* in Tissues of Experimentally Infected Rats and a Naturally Infected Water Buffalo (*Bubalus bubalis*). M. W. SUDARTO, H. TABEL, and D. M. HAINES 162

DRUG ACTION

A Novel Anthelmintic Model Utilizing Jirds, *Meriones unguiculatus,* Infected with *Haemonchus contortus.* G. A. CONDER, L.-W. JEN, K. S. MARBURY, S. S. JOHNSON, P. M. GUIMOND, E. M. THOMAS, and B. L. LEE 168

Protective Qualities of Mitochondrial and Cytosolic Fluorescent Dyes Against In Vitro and In Vivo Infection by the Tulahuen Strain of *Trypanosoma cruzi.* M. V. DENNIS, M. M. JUDY, J. L. MATTHEWS, and F. SOGANDARES-BERNAL 171

Effects of Sulfadiazine and Amprolium on *Neospora caninum* (Protozoa: Apicomplexa) Infections in Mice. DAVID S. LINDSAY and J. P. DUBEY 177

Experimental and Theoretical Studies of Albendazole, Oxibendazole, and Tioxidazole. R. O. McCRACKEN and K. B. LIPKOWITZ 180

Laboratory Selection of a Benzimidazole-resistant Isolate of *Trichostrongylus colubriformis* for Ivermectin Resistance. W. L. SHOOP, J. R. EGERTON, C. H. EARY, and D. SUHAYDA 186

ECOLOGY

Occurrence of *Placobdella parasitica* (Hirudinea) on Snapping Turtles, *Chelydra serpentina,* in Southeastern Ontario. RONALD J. BROOKS, DAVID A. GALBRAITH, and JAMES A. LAYFIELD 190

A Study on the Prevalence and Intensity of Occurrence of *Thelazia skrjabini* (Nematoda: Thelazioidea) in Cattle in Central Alberta, Canada. MURRAY J. KENNEDY, DAVID T. MORAIKO, and LAKSIRI GOONEWARDENE 196

EPIDEMIOLOGY

Effect of High Temperature on Infectivity of *Toxoplasma gondii* Tissue Cysts in Pork. J. P. DUBEY, A. W. KOTULA, A. SHARAR, C. D. ANDREWS, and D. S. LINDSAY 201

GROWTH AND DEVELOPMENT

Development of the Excretory Bladder of the Lung Fluke *Paragonimus ohirai* (Trematoda: Troglotrematidae). YASUHIDE ORIDO 205

IMMUNOLOGY

Humoral Factors and Nonspecific Immune Suppression in Syrian Hamsters Infected with *Leishmania donovani.* THOMAS G. EVANS, D. SMITH, and RICHARD D. PEARSON 212

Changing Surface Carbohydrate Configurations During the Growth of *Leishmania major.* R. L. JACOBSON and L. F. SCHNUR 218

Differential Binding of Hemolymph Proteins from Schistosome-resistant and -susceptible *Biomphalaria glabrata* to *Schistosoma mansoni* Sporocysts. FRANCES J. SPRAY and WILLARD O. GRANATH, JR. 225

A Spectrum of Antibody Response with Time After *Trichinella spiralis* Infection in Rats. YUZO TAKAHASHI, NAOTO MIZUNO, TAKAKO UNO, AKIYOSHI AISAKA, and TSUNEJI ARAKI 230

IN VITRO CULTIVATION

Uniform Strobilar Development of *Echinococcus multilocularis* In Vitro from Protoscolex to Immature Stages. R. C. A. THOMPSON, P. DEPLAZES, and J. ECKERT 240

ULTRASTRUCTURE

Scanning Electron Microscopy of the Sheathed Infective Larva and Parasitic Third-stage Larva of *Haemonchus contortus* (Nematoda: Trichostrongyloidea). J. R. LICHTENFELS, H. R. GAMBLE, and J. P. PURCELL 248

RESEARCH NOTES

Continuous In Vitro Cultivation of *Sarcocystis cruzi*. CONNIE D. ANDREWS, RONALD FAYER, and J. P. DUBEY 254

A First Case of Myiasis in Fish. G. A. BRISTOW, B. BERLAND, and S. A. FOSSÅ 256

Tissue "Cysts" of *Hepatozoon griseisciuri* in the Grey Squirrel, *Sciurus carolinensis*: The Significance of These Cysts in Species of *Hepatozoon*. SHERWIN S. DESSER 257

Some Ascaridid, Spirurid, and Rhabditid Nematodes of the Neotropical Turtle Genus *Rhinoclemmys* in Mexico and South America. WILLIAM G. DYER and JOHN L. CARR 259

Evaluation of Medium Supplements for In Vitro Cultivation of *Wuchereria bancrofti*. EILEEN D. FRANKE, WIWIEK RIBERU, and IWA WIADY 262

Nutrient Broth for the Cultivation of *Leishmania*. JOHN B. KADDU and MICHAEL P. NYAMORI 265

The Detection of *Giardia muris* and *Giardia lamblia* Cysts by Immunofluorescence in Animal Tissues and Fecal Samples Subjected to Cycles of Freezing and Thawing. STANLEY L. ERLANDSEN, LEE ANN SHERLOCK, and WILLIAM J. BEMRICK 267

Fatal Toxoplasmosis in Koalas (*Phascolarctos cinereus*). W. J. HARTLEY, J. P. DUBEY, and D. S. SPIELMAN 271

Purification of Antigen B from *Taenia solium* Cysticerci by Affinity to Mammalian Collagen. JUAN PEDRO LACLETTE, ALEJANDRO ALAGÓN, KAETHE WILLMS, and ALFONSO TORRE-BLANCO 273

Immune Competence of *Aedes trivittatus* Hemocytes as Assessed by Lectin Binding. JIANYONG LI and BRUCE M. CHRISTENSEN 276

Rapid Diagnosis of *Brugia malayi* and *Wuchereria bancrofti* Filariasis by an Acridine Orange/Microhematocrit Tube Technique. GARY W. LONG, LELAND S. RICKMAN, and JOHN H. CROSS 278

New Host and Locality Record for *Trypanosoma peromysci*. RICHARD D. McKOWN, STEVE J. UPTON, ROBERT D. KLEMM, and ROBERT K. RIDLEY 281

Age-related Changes of the Susceptibility to Infection with *Brugia pahangi* in Male and Female BALB/c Mice. HIROKUNI NAKANISHI, YOICHIRO HORII, KENJIRO TERASHIMA, and KOICHIRO FUJITA 283

Naturally Occurring Apicomplexan Acute Interstitial Pneumonitis in Thick-billed Parrots (*Rhynchopsitta pachyrhyncha*). JEROME H. SMITH, THOMAS M. CRAIG, E. A. DILLARD, III, PAMELA J. G. NEILL, and LARRY P. JONES 285

Myxozoa of Deep-sea Fishes in the Northwestern Atlantic. W. THRELFALL and R. A. KHAN 288

Direct Evidence that the Cuticle Surface of *Trichinella spiralis* Muscle Larvae Shares Antigenicity with Stichocyte α-Granules and the Esophagus-occupying Substance. YUZO TAKAHASHI, NAOTO MIZUNO, TAKAKO UNO, CHIYOKICHI TOKUDA, and TSUNEJI ARAKI 290

Experimental Verification of the Metacercarial Stage of *Rhipidocotyle lepisostei* (Trematoda: Bucephalidae) with Notes on the Natural Occurrence of Its Adult Stage in Gars in Texas and Virginia. WILLIAM J. WARDLE 293

IN MEMORIAMS

John Dary Mizelle, 1903–1989. JOHN W. CRANE and DELANE C. KRITSKY 185

Horace Wesley Stunkard, 1889–1989. CHARLES E. TANNER 224

OBITUARY NOTICE

Arlie Cornelius Todd 239

ANNOUNCEMENT

International Symposium on Emerging Problems in Food-borne Parasitic Zoonoses 247

JUNE 1990, NUMBER 3

BIOCHEMISTRY

Alterations in the Longevity and Fecundity of Adult *Trichinella pseudospiralis* Related to Method of Isolation of Infective Larvae GEORGE L. STEWART, REBECCA R. KENNEDY, and ELISABETH LARSEN 297

Biochemical Analyses of Secretory and Excretory Products of Adult *Dipetalonema viteae* in Culture. NANCY WISNEWSKI, HOWARD J. SAZ, JÜRGEN MÖSSINGER, BECKY S. DEBRUYN, and PAUL P. WEINSTEIN 302

BIOLOGICAL CONTROL

The Effects of Single Exposures of *Aedes aegypti* Larvae and Pupae to *Plagiorchis noblei* Cercariae in the Laboratory. S. J. DEMPSTER and M. E. RAU 307

BIOSYSTEMATICS AND SURVEYS

Three New Coccidia (Apicomplexa) from the Hood Island Lizard, *Tropidurus delanonis,* from the Galápagos Archipelago. AIDA LUZ AQUINO-SHUSTER, DONALD W. DUSZYNSKI, and HOWARD L. SNELL 313

A New Species of *Calliobothrium* (Tetraphyllidea: Onchobothriidae) from the Whiskery Shark, *Furgaleus macki,* in Australia. J. N. CAIRA and T. R. RUHNKE 319

Coccidia (Apicomplexa) from Heteromyid Rodents in the Southwestern United States, Baja California, and Northern Mexico with Three New Species from *Chaetodipus hispidus.* P. L. FORD, D. W. DUSZYNSKI, and C. T. MCALLISTER 325

The Coccidia (Apicomplexa: Eimeriidae) of Crocodylia, with Descriptions of Two New Species from *Alligator mississippiensis* (Reptilia: Alligatoridae) from Texas. CHRIS T. MCALLISTER and STEVE J. UPTON 332

Cathetocephalus australis N. Sp. (Cestoidea: Cathetocephalidae) from Australia, with a Proposal for Cathetocephalidae N. Ord. GERALD D. SCHMIDT and IAN BEVERIDGE 337

DRUG ACTION

Surface Properties of Membrane Vesicles Prepared from Muscle Cells of *Ascaris suum.* R. J. MARTIN, J. R. KUSEL, and A. J. PENNINGTON 340

Anthelmintic Activity of Paraherquamide in Sheep. W. L. SHOOP, J. R. EGERTON, C. H. EARY, and D. SUHAYDA 349

Protection of *Toxoplasma gondii*-infected Mice by Stearylamine-bearing Liposomes. HIROSHI TACHIBANA, EISAKU YOSHIHARA, YOSHIMASA KANEDA, and TAIJI NAKAE 352

EPIZOOTIOLOGY

Failure of White-tailed Deer, *Odocoileus virginianus* L., to Sustain a Population of Cattle Ticks, *Boophilus annulatus* (Say), Through Successive Generations. RONALD B. DAVEY 356

Trichinella spiralis in an Agricultural Ecosystem: Transmission in the Rat Population. DAVID A. LEIBY, CHARLES H. DUFFY, K. DARWIN MURRELL, and GERHARD A. SCHAD 360

IMMUNOLOGY

In Situ Pulmonary Responses of T Cell and Macrophage Subpopulations to a Challenge Infection in Mice Vaccinated with Irradiated Cercariae of *Schistosoma mansoni.* TAKAHITO KAMBARA and R. ALAN WILSON 365

Macaca fascicularis, a Nonpermissive Host for the Human Filarial Parasite *Loa loa.* MARGARET PINDER, ANNICK LECLERC, HILARY A. FLOCKHART, and THOMAS G. EGWANG 373

Characterization of *Nippostrongylus brasiliensis* Infection in Different Strains of Mice. A. W. STADNYK, P. J. MCELROY, J. GAULDIE, and A. D. BEFUS 377

Acquired Resistance to Migrating Larvae of *Ascaris suum* in Young Pigs by Repeated Drug-abbreviated Infections. M. STANKIEWICZ, E. L. JESKA, and D. L. FROE 383

MISET: An Immunological Technique for the Serodiagnosis of *Cryptobia salmositica* (Sarcomastigophora: Kinetoplastida) Infection in *Oncorhynchus mykiss.* PATRICK T. K. WOO 389

LIFE CYCLE AND DEVELOPMENT

Serum-stimulated Feeding In Vitro by Third-stage Infective Larvae of the Canine Hookworm *Ancylostoma caninum.* J. M. HAWDON and G. A. SCHAD 394

Development and Sexual Maturation of *Taenia crassiceps* (Cestoda) in the Golden Hamster. MAYOKO KITAOKA, YUZABURO OKU, MUNEHIRO OKAMOTO, and MASAO KAMIYA 399

PATHOGENESIS AND HOST RESPONSE

Effects of Murine Giardiasis on Growth, Intestinal Morphology, and Disaccharidase Activity. A. BURET, D. G. GALL, and M. E. OLSON 403

Infections in Mice with Tachyzoites and Bradyzoites of *Neospora caninum* (Protozoa: Apicomplexa). DAVID S. LINDSAY, and J. P. DUBEY 410

The Pathogenicity, Localization, and Cyst Structure of Echinostomatid Metacercariae (Trematoda) Infecting the Kidneys of the Frogs *Rana clamitans* and *Rana pipiens.* THOMAS R. MARTIN and DAVID BRUCE CONN 414

Adaptation of an Introduced Host to an Indigenous Parasite. JUDY A. SAKANARI and MIKE MOSER 420

RESEARCH NOTES

Transfer of Extraintestinal Stages of *Eimeria vermiformis* in the Mouse. STANLEY J. BALL, IAN ALLEN, and PETER DASZAK 424

Efficacy of Agar-plate Culture in Detection of *Strongyloides stercoralis* Infection. TAMIKI ARAKAKI, MASAAKI IWANAGA, FUKUNORI KINJO, ATSUSHI SAITO, RYUJI ASATO, and TSUYOSHI IKESHIRO 425

Anatomical Distribution of Developing Trophozoites and Schizonts of *Plasmodium vivax* in *Aotus lemurinus lemurinus* and *Saimiri sciureus.* HENRY N. FREMOUNT AND RICHARD N. ROSSAN 428

Electrophoretic Differentiation of Two *Halipegus* (Trematoda: Hemiuridae) Congeners in an Amphibian Population. TIMOTHY M. GOATER, MARGARET MULVEY, and GERALD W. ESCH 431

Immunoprecipitation of In Vitro-translated Products of *Nippostrongylus brasiliensis* RNA. T. D. G. LEE and E. J. ADAMS 434

Praziquantel-induced Secretion of Proteolytic Enzyme from *Schistosoma mansoni* Cercariae. KENICHIRO MATSUMURA, MASAAKI SHIMADA, KATSUYUKI SATO, and YOSHIKI AOKI 436

Chemosensitivity of *Philophthalmus megalurus* (Trematoda) Miracidia. PAUL M. NOLLEN 439

Pneumocystis carinii Infection in Corticosteroid-treated Cats. TSUNEZO SHIOTA, YOSHIHARU SHIMADA, HIROSHI KURIMOTO, and HIROSHI OIKAWA 441

A Comparison of the Amino Acid Sequences of *Crithidia fasciculata* and *Trypanosoma rhodesiense* Cytochromes *c.* DESIREE A. SYLVESTER and GEORGE C. HILL 445

Contributions to the Life History of *Proterometra dickermani* (Digenea: Azygiidae). GARY L. UGLEM, MARK C. LEWIS, and TERRY M. SHORT 447

In Vitro Murine Lymphocyte Blastogenic Responses to *Cryptosporidium parvum.* WILLIAM M. WHITMIRE and JAMES A. HARP 450

BOOK REVIEWS

Guide to the Parasites of Fishes of Canada, Part III. Acanthocephala, by H. P. Arai, and Cnidaria, by M. N. Arai. OMAR M. AMIN 310

Impact of Helminth Infections on Human Nutrition, by Lani S. Stephenson. GILBERT A. CASTRO 312

Medical Parasitology: A Self Instructional Text, 3rd ed., by Ruth Leventhal and Russell F. Cheadle. RICHARD S. WACHA 339

CRITICAL COMMENT

The Rarity of Asexual Reproduction among *Mesocestoides* Tetrathyridia (Cestoda). DAVID BRUCE CONN 453

OBITUARY NOTICES

Eli Chernin 376

George Robert Coatney 388

Herbert Walton Cox 398

Marc Henri Dresden 409

Hsi Fan Hsu 419

ANNOUNCEMENT

Position Available: Graduate Teaching Associate in Parasitology 301

AUGUST 1990, NUMBER 4

BIOCHEMISTRY

Mitochondrial Hydrogen Peroxide Formation and the Fumarate Reductase of *Hymenolepis diminuta.* CARMEN F. FIORAVANTI and JACQUELINE M. REISIG 457

Reduction in Cell Entry of *Eimeria tenella* (Coccidia) Sporozoites by Protease Inhibitors, and Partial Characterization of Proteolytic Activity Associated with Intact Sporozoites and Merozoites. A. LORRAINE FULLER and L. R. McDOUGALD 464

BIOSYSTEMATICS AND SURVEYS

Phyllobothrium hallericola N. Sp. (Cestoidea: Phyllobothriidae) from a Round Stingray, *Urolophus halleri,* in the Sea of Cortez. CYNTHIA CHURCH and GERALD D. SCHMIDT 468

Nematodes of the Family Heligmonellidae (Trichostrongyloidea) Collected from Rodents of the Ryukyu Archipelago and Taiwan. HIDEO HASEGAWA 470

Three New Species of *Eimeria* (Apicomplexa: Eimeriidae) from *Apalone spinifera pallidus* (Testudines: Trionychidae) in Texas, with a Redescription of *E. amydae.* CHRIS T. McALLISTER, STEVE J. UPTON, and LONNIE D. McCASKILL 481

Prevalence and Abundance of Equine Strongyles (Nematoda: Strongyloidea) in Tropical Australia. M. W. MFITILODZE and G. W. HUTCHINSON 487

Sarcocystis kirkpatricki N. Sp. (Apicomplexa: Sarcocystidae) in Muscles of Raccoons (*Procyon lotor*) from Illinois. DANIEL E. SNYDER, GLEN C. SANDERSON, MARIA TOIVIO-KINNUCAN, and BYRON L. BLAGBURN 495

Polystoma cuvieri N. Sp. (Monogenea: Polystomatidae), A Parasite of the Urinary Bladder of the Leptodactylid Frog *Physalaemus cuvieri* in Paraguay. C. VAUCHER 501

CULTIVATION

Cutivation of *Clinostomum marginatum* (Digenea: Clinostomatidae) Metacercariae In Vitro, in Chick Embryo and in Mouse Coelom. OMER R. LARSON and GARY L. UGLEM 505

ECOLOGY

Prevalence and Intensity of *Pseudodelphis oligocotti* N. Gen., N. Sp. (Dracunculoidea; Guyanemidae) in the Tidepool Sculpin, *Oligocottus maculosus* (Scorpaeniformes; Cottidae). M. L. ADAMSON and MYRON ROTH 509

Distribution, Behavior, and Course of Patency of *Dracunculus insignis* in Experimentally Infected Ferrets. FLOY H. BRANDT and MARK L. EBERHARD 515

Life History Differences between Two Species of *Gregarina* in *Tenebrio molitor* Larvae. T. R. RUHNKE and J. JANOVY, JR. 519

IMMUNOLOGY

Genetic Control of Murine Immune Responses to Larval *Dirofilaria immitis.* DAVID ABRAHAM and ROBERT B. GRIEVE 523

Kinetics of Liver Trapping of Infective Larvae in Murine Toxocariasis. J. C. PARSONS and R. B. GRIEVE 529

LIFE CYCLE AND DEVELOPMENT

The Life Cycle of *Pygidiopsis ardeae* Køie, 1990 (Digenea, Heterophyidae). MARIANNE KØIE 537

The Possible Influence of Male Worm Age on the Fecundity of *Moniliformis moniliformis* (Acanthocephala) in Laboratory Rats. GULSHAN PARVEEN 542

The Effect of Oxygen and Carbon Dioxide on the Development of the Free-living Stages of *Strongyloides ratti* in Axenic Culture. KATHERINE A. TAYLOR and PAUL P. WEINSTEIN 545

PATHOGENESIS AND HOST RESPONSE

Caryospora-associated Dermatitis in Dogs. J. P. DUBEY, S. S. BLACK, L. T. SANGSTER, D. S. LINDSAY, C. A. SUNDERMANN, and M. J. TOPPER 552

The Effect of *Schistosoma haematobium* Infection on the Growth and Fecundity of Three Sympatric Species of Bulinid Snails. SARAH E. FRYER, ROBERT C. OSWALD, ALLAN J. PROBERT, and NORMAN W. RUNHAM 557

Serum Hemolytic Activity in Dogs Infected with *Babesia gibsoni.* TAKAFUMI ONISHI, KEIKO UEDA, MAKIO HORIE, TAKETSUGU KAJIKAWA, and IWAO OHISHI 564

The American Lung Fluke, *Paragonimus kellicotti,* in a Cat Model. PETER J. WEINA and DOUGLAS M. ENGLAND 568

RESEARCH NOTES

Concurrent Infections of the Trematode *Echinostoma caproni* and the Tapeworms *Hymenolepis diminuta* and *Hymenolepis microstoma* in Mice. J. ANDREASSEN, A. B. ODAIBO, and N. Ø. CHRISTENSEN 573

Intermediate Host of *Mediorhynchus orientalis* (Acanthocephala: Gigantorhynchidae). DAVID P. BOLETTE 575

Inhibition of Leukocyte Function by Serum from Patients with Trichinellosis. F. BRUSCHI, E. POZIO, G. CARULLI, R. POLIDORI, and A. AZZARA 577

Single and Dual Infections of the Land Snail *Helix aspersa* with *Muellerius capillaris* and *Alloionema appendiculatum* (Nematoda). J. CABARET and S. MORAND 579

Ectoparasitic and Phoretic Arthropods of Virginia Opossums (*Didelphis virginiana*) in Central Tennessee. LANCE A. DURDEN and NIXON WILSON 581

Cysticerci (Cestoda: Taeniidae) from White-tailed Deer, *Odocoileus virginianus,* in Southern Florida. DONALD J. FORRESTER and ROBERT L. RAUSCH 583

Vesicles in the Proboscis of Acanthocephala. HARRY L. HOLLOWAY, JR. and RANDALL J. GEE 585

Early Schizonts of *Leucocytozoon caulleryi.* TAKASHI ISOBE and KAZUO AKIBA 587

Mallard Ducklings (*Anas platyrhynchos*) Experimentally Infected with *Echinostoma trivolvis* (Digenea). KATHLEEN H. MUCHA, JANE E. HUFFMAN, and BERNARD FRIED 590

A Contribution to the Etiology of Racemose Cysticercosis. S. LACHBERG, R. C. A. THOMPSON, and A. J. LYMBERY 592

Leishmania braziliensis in the Squirrel Monkey: Development of Primary and Satellite Lesions and Lack of Cross-immunity with *Leishmania donovani.* RICARDO LUJAN, WILLIE L. CHAPMAN, JR., WILLIAM L. HANSON, and VIDA A. DENNIS 594

Proteocephalus ambloplitis and *Contracaecum* Sp. from Largemouth Bass (*Micropterus salmoides*) Stocked into Boundary Reservoir, Saskatchewan. ALEXANDER J. SZALAI and TERRY A. DICK 598

Localization of a 24-Kilodalton Glycoprotein in Adult *Schistosoma mansoni* Using Immunofluorescence and Immunoelectron Microscopy. YOU ZHOU, STEVEN R. KARCZ, RON B. PODESTA, and MICHAEL W. CLARKE 601

BOOK REVIEWS

Parasites of Freshwater Fishes of Northwest Europe. Materials of the International Symposium within the Program of the Soviet–Finnish Cooperation, 10–14 January, 1988, edited by O. N. Bauer. G. L. HOFFMAN 541

Current Concepts in Parasitology, edited by Ronald C. Ko. DENNIS J. MINCHELLA 606

OBITUARY NOTICES

Reino Samuel Freeman 500

Wanda Sanborn Hunter 544

OCTOBER 1990, NUMBER 5

STOLL–STUNKARD LECTURE

The Molecular Revolution and Nematode Parasitology: Yesterday, Today, and Tomorrow. BRIDGET M. OGILVIE, M. E. SELKIRK, and R. M. MAIZELS 607

BIOCHEMISTRY

Tyrosine-derived Cross-linking Amino Acids in the Sheath of *Haemonchus contortus* Infective Larvae. R. H. FETTERER and M. L. RHOADS 619

Identification of the Secreted Neutral Proteases from *Anisakis simplex*. JUDY A. SAKANARI and JAMES H. McKERROW ... 625

BIOSYSTEMATICS AND SURVEYS

Growth Characteristics in Axenic and Cell Cultures, Protein Profiles, and Zymodeme Typing of Three *Trypanosoma cruzi* Isolates from Louisiana Mammals. STEPHEN C. BARR, VIDA A. DENNIS, and THOMAS R. KLEI 631

Augmented Description of *Aplectana travassosi* (Nematoda: Cosmocercidae) from Leptodactylid Frogs of Ecuador. WILLIAM G. DYER 639

New Species of *Andrya* and *Paranoplocephala* (Cestoidea: Anoplocephalidae) from Voles and Mole-rats in Israel and Syria. JEANNE M. FAIR, GERALD D. SCHMIDT, and GUTA WERTHEIM 641

Cryptobia cataractae from the Blood of *Semotilus atromaculatus*: Structure and Division in the Fish. SIMON R. M. JONES and PATRICK T. K. WOO 645

Aphanospirorchis kirki N. Gen., N. Sp. (Digenea: Spirorchidae), a Parasite of the Midland Painted Turtle, *Chrysemys picta marginata*, from Northwestern Indiana, with Comments on the Proper Spelling of the Family Name. THOMAS R. PLATT 650

Differences in Infestation Intensity and Prevalence of Hinge and Mantle Margin *Meiogymnophallus minutus* Metacercariae (Gymnophallidae) in *Cerastoderma edule* (Bivalvia): Possible Species Coexistence in Ria de Aveiro. FERNANDA RUSSELL-PINTO 653

Electrophoretic Characterization of *Giardia* Isolated from Humans, Cattle, Sheep, and a Dog in Switzerland. ANNE M. STRANDÉN, JOHANNES ECKERT, and PETER KÖHLER 660

DEVELOPMENT

Developmental and Age-related Changes in Proteins in the Female Reproductive Tract of *Heligmosomoides polygyrus* (Nematoda). ANGELA M. McGIBBON and BARBARA M. MacKINNON 669

EPIDEMIOLOGY

The Peruvian III Strain of *Plasmodium brasilianum* in *Saimiri sciureus boliviensis* Monkeys. WILLIAM E. COLLINS, TRENTON K. RUEBUSH II, JIMMIE C. SKINNER, VALERIE K. FILIPSKI, J. ROGER BRODERSON, PEGGY S. STANFILL, and CARLA L. MORRIS 676

Short-tailed Shrews as Reservoirs of the Agents of Lyme Disease and Human Babesiosis. SAM R. TELFORD III, THOMAS N. MATHER, GREGORY H. ADLER, and ANDREW SPIELMAN 681

IMMUNOLOGY

Trickle Infections with *Nippostrongylus brasiliensis* in Rats: Larval Migration Through the Lungs. WITOLD A. FERENS, HISAO P. ARAI, and A. DEAN BEFUS 684

Trypanosoma cruzi Antigen-specific Antibody Response in Immunized Mice During Acute and Chronic Infection. KELLY SPEARS MIKHAIL and EDWIN C. ROWLAND 690

Analysis of Antibody Cross-reactivity in Experimental American Trypanosomiasis. EDWARD C. ROSFJORD, KELLY SPEARS MIKHAIL, EDWIN C. ROWLAND, and MALCOLM R. POWELL 698

Genetic Analysis of the Relationships between Interleukin Production and Worm Rejection in *Trichinella spiralis*-infected Inbred Mice. DUZHANG ZHU and ROBIN G. BELL 703

IN VITRO CULTIVATION

A Medium for the Continuous Cultivation of Bloodstream Forms of *Trypanosoma lewisi* at 37 C. MEREDITH A. BEHR, SUSIE A. MATHEWS, and PHILIP A. D'ALESANDRO 711

Axenic Culture and Characterization of *Giardia ardeae* from the Great Blue Heron (*Ardea herodias*). STANLEY L. ERLANDSEN, WILLIAM J. BEMRICK, CAROL L. WELLS, DENNIS E. FEELY, LLOYD KNUDSON, SCOTT R. CAMPBELL, HARRY VAN KEULEN, and EDWARD L. JARROLL 717

Escape of Rediae form Miracidia of *Philophthalmus megalurus* and *Philophthalmus gralli* during In Vitro Culture. PAUL M. NOLLEN 725

RESEARCH NOTES

Transmission of *Plasmodium fragile* to *Saimiri* Monkeys. WILLIAM E. COLLINS, JIMMIE C. SKINNER, VALERIE K. FILIPSKI, J. ROGER BRODERSON, PEGGY S. STANFILL, and CARLA L. MORRIS 730

Neospora caninum (Apicomplexa) in an Aborted Equine Fetus. J. P. DUBEY and M. L. PORTERFIELD 732
Prevalence of *Trypanosoma theileri* in Louisiana Cattle. RITA G. FARRAR and THOMAS R. KLEI 734
Domestic Sheep as a Rare Definitive Host of the Large American Liver Fluke *Fascioloides magna*. W. J. FOREYT 736
Auxotrophic Mutants of *Crithidia fasciculata*. LENISE APARECIDA MARTINS GARCIA and ISAAC ROITMAN 739
Isolation of *Leishmania mexicana* from *Neotoma micropus* Collected in Texas. CHAD P. McHUGH, MAX GROGL, and SARA F. KERR 741
Schistosoma intercalatum from Cameroon and Zaïre: Chronobiological Differentiation of Cercarial Emergence. J. R. PAGÉS and A. THÉRON 743
Electrophoretic Evidence Concerning the Relationship between *Haplometrana* and *Glypthelmins* (Digenea: Plagiorchiiformes). BRUCE H. RANNALA 746
Egg and Miracidium of *Hirudinella ventricosa* (Trematoda: Hirudinellidae). MEENAKSHI MURUGESH and R. MADHAVI 748
Infectivity of *Trichinella pseudospiralis* Isolated from Carrion. GEORGE L. STEWART, REBECCA R. KENNEDY, and ELISABETH LARSEN 750
In Vitro Attenuation of *Cryptobia salmositica* and its Use as a Live Vaccine Against *Cryptobiosis* in *Oncorhynchus mykiss*. PATRICK T. K. WOO and SEN LI 752

BOOK REVIEWS

Diagnostic Pathology of Parasitic Infections with Clinical Correlations, by Y. Gutierrez. ALLEN W. CHEEVER 638
Progress in Clinical Parasitology, Vol. I, edited by Tsieh Sun. EUGENE G. HAYUNGA 756

IN MEMORIAM

Reino S. Freeman, 1919–1990. MURRAY FALLIS and SHERWIN DESSER 757

DECEMBER 1990, NUMBER 6

SOCIETY BUSINESS

Sixty-fifth Annual Business Meeting. LILLIAN F. MAYBERRY 759
Eightieth Annual Council Meeting. LILLIAN F. MAYBERRY 761
Presentation of the Bueding–von Brand Award to Moises Agosin. HOWARD J. SAZ 776
Introduction of Robert B. Grieve as the Henry Baldwin Ward Medalist for 1990. DANIEL R. BROOKS 777
Acceptance of the Henry Baldwin Ward Medal. R. B. GRIEVE 779

BEHAVIOR

Echinostoma caproni: Mating Behavior and the Timing of Development and Movement of Reproductive Cells. PAUL M. NOLLEN 784
Photocycle-dependent Emergence by Cercariae of *Halipegus occidualis* from *Helisoma anceps*, with Special Reference to Cercarial Emergence Patterns as Adapations for Transmission. ALLEN W. SHOSTAK and GERALD W. ESCH 790

BIOCHEMISTRY

Effect of Host Feeding and Available Glucose on Glycogen Synthase and Phosphorylase Activities in *Hymenolepis diminuta* and *Vampirolepis microstoma*. SAMUEL E. WAGES and LARRY S. ROBERTS 796

BIOSYSTEMATICS AND PHYLOGENY

Polymorphism of Eimerian Oocysts Can Be A Problem in Naturally Infected Hosts: An Example from Subterranean Rodents in Bolivia. SCOTT L. GARDNER and DONALD W. DUSZYNSKI 805
Male Dimorphism in Two New Species of Nematode (Pharyngodonidae: Oxyurida) from New Zealand Lizards. RUTH AINSWORTH 812
Morphometric Analysis of *Psoroptes* Spp. Mites from Bighorn Sheep, Mule Deer, Cattle, and Rabbits. WALTER BOYCE, LEE ELLIOTT, RICHARD CLARK, and DAVID JESSUP 823

DIAGNOSTICS

A Technique for Microfilarial Detection in Preserved Blood Using Nuclepore Filters. JENNIFER W. DICKERSON, MARK L. EBERHARD, and PATRICK J. LAMMIE 829
DNA Probes Distinguish Geographical Isolates and Identify a Novel DNA Molecule of *Babesia bovis*. DOUGLAS P. JASMER, DAVID W. REDUKER, WILL L. GOFF, DAVID STILLER, and TRAVIS C. McGUIRE 834
Isolation of *Trichinella*-specific Antigens for Diagnosis by Gradient Monoclonal Antibody Affinity Chromatography. XINZHUAN SU and ANNIE K. PRESTWOOD 842

DRUG ACTION

Study of the Gametocytocidal/Sporontocidal Action of Qinghaosu (Artemisinin) by Electron Microscopy. G. P. DUTTA, AMULYA MOHAN, and RENU TRIPATHI 849

Structure–Activity Relationships of Benzothiazole and Benzimidazole Anthelmintics: A Molecular Modeling Approach to In Vivo Drug Efficacy. R. O. McCRACKEN and K. B. LIPKOWITZ 853

EPIZOOTIOLOGY

Susceptibility of Wild Mammals to Infection with *Naegleria fowleri.* DAVID T. JOHN and KENNETH L. HOPPE 865

Transmammary Transmission of Mesocercariae of *Alaria marcianae* (Trematoda) in Experimentally Infected Primates. W. L. SHOOP, W. F. FONT, and P. F. MALATESTA 869

IMMUNOLOGY

Relationships between the Defensive Systems of Iberian-breed Swine and the European Vector of African Swine Fever, *Ornithodoros erraticus.* A. OLEAGA, R. PEREZ-SANCHEZ, and A. ENCINAS-GRANDES 874

Shared Epitopes between the Soluble Proteins of *Hypoderma lineatum* and *Hypoderma bovis* First Instars. JOHN H. PRUETT, PHILIP J. SCHOLL, and KEVIN B. TEMEYER 881

PATHOGENESIS AND HOST RESPONSE

Histopathology in Hosts Parasitized by *Sarcoptes scabiei.* L. G. ARLIAN, R. H. BRUNER, R. A. STUHLMAN, M. AHMED, and D. L. VYSZENSKI-MOHER 889

In Vitro Effect of Larval *Schistosoma mansoni* Excretory–Secretory Products on Phagocytosis-stimulated Superoxide Production in Hemocytes from *Biomphalaria glabrata.* VINCENT A. CONNORS and TIMOTHY P. YOSHINO 895

The Effects of Host Diet on *Plasmodium yoelii nigeriensis.* CHARLES A. C. IBEKWE and SYDNEY C. UGWUNNA 903

Lernaeocera branchialis: A Potential Pathogen to Cod Ranching. R. A. KHAN, E. M. LEE, and D. BARKER 913

RESEARCH NOTES

Infections of Inbred Mice with Three *Trypanosoma cruzi* Isolates from Louisiana Mammals. S. C. BARR, C. C. BROWN, V. A. DENNIS, and T. R. KLEI 918

Variations of Broncho-Alveolar Lavage Techniques Affect Cell Recoveries. WITOLD A. FERENS and MERLE OLSON 921

In Vitro Maturation of the Exoerythrocytic Stage of *Plasmodium knowlesi* Observed under Phase Contrast Microscopy. PASCAL MILLET, WILLIAM E. COLLINS, CLAUDE E. MONKEN, and BOBBY G. BROWN 923

Growth of *Trichomonas vaginalis* in a Serum-free McCoy Cell Culture System. KAREN C. MEYSICK and GARY E. GARBER 926

BOOK REVIEW

Parasitic Diseases, 2nd ed., by M. Katz, D. D. Despommier, and R. W. Gwadz. JOHN E. HALL 783

CRITICAL COMMENT

Genetic Distance and Parasite Taxonomy. BRUCE H. RANNALA 929

EDITORIAL ACKNOWLEDGMENTS (VOLUME 76, 1990) 931

MAILING DATES FOR VOLUME 76, 1990 795

OBITUARY NOTICES

DONAL G. MYER 833

GERALD DEE SCHMIDT 873

JAMES ALLEN SCOTT 912

ANNOUNCEMENT

Methods of Immunologic Research and Diagnosis 888

INDEXES

Author Index, Volume 76 932

Subject Index, Volume 76 936